Bachelor of Science in Computing
Nexus in Computing
2022 - 2023 Advising Packet

Questions?

Contact our professional Academic Advisor:

Ms. Alexandra Young
ayoung@westga.edu
678-839-6651

Note: This packet includes a summary of curriculum requirements, course descriptions, suggested program maps, etc. and is intended as a resource for advising purposes only. Official catalog information including degree program requirements and course descriptions are listed in the UWG Undergraduate Catalog. Please consult your advisor with any questions or concerns.
COMPUTING
AT THE UNIVERSITY
OF WEST GEORGIA

LEARN THE BREADTH & DEPTH OF COMPUTING, PREPARING YOU FOR DIVERSE JOBS

Students will learn in-depth during 1 OR MORE SEMESTER PROJECTS WITH INDUSTRY PARTNERS

Graduates will be ready for HIGH-DEMAND CAREERS

4,670 AVERAGE ANNUAL OPENINGS in computing-related fields

A career in the computing field provides FINANCIAL STABILITY & PROJECTED GROWTH

In Georgia, computing-related positions are projected to INCREASE 17% IN 10 YEARS

The program is designed to MEET NEW MARKET DEMANDS

SALARY INCREASE OF $20,000 IN 1st 5 YEARS

UNIVERSITY OF WEST GEORGIA
Computing Programs Overview

The Nexus and BS in Computing programs enable students to gain a broad understanding of the ever changing field of Computing. Students will deepen their knowledge and sharpen their skills through depth courses in career-focused areas of specialization. Upon graduation, students will find employment in high-demand careers in areas such as cybersecurity, information technology, system and network administration, application development, and data analytics.

Flexible Delivery Formats

The programs are designed to be flexible to meet the needs of both traditional students and adult learners, including those who may transfer in credits from other institutions. Students may pursue the degree entirely online, face-to-face, or a hybrid combination of online and face-to-face.

Internships

Both programs provide an opportunity to gain on-the-job experience through one or more internships with industry partners. Internships count for course credit toward the degree.

BS in Computing

The goal of the Bachelor of Science in Computing (BSC) degree is to give students a broad understanding of the ever changing field of Computing while allowing them to deepen their knowledge and sharpen their skills through a variety of depth courses in career-focused areas of specialization. Graduates will be well prepared to adapt to a wide-variety of industry needs with courses in cybersecurity, system and network administration, and application development. The latter option includes classes in mobile, game, and web development. Students will also have the opportunity to create a custom specialization in consultation with their advisor and the Department of Computing and Mathematics.

Embedded Nexus Degree: GenEd Core + 5 Computing Courses

The Nexus degree is a unique new academic credential created by the University System of Georgia to help more Georgians access careers in high demand areas. Based on a subset of the BS in Computing, the Nexus in Computing is a 60 hour program that includes the general education core and 18 hours in a career-focused computing specialization (cybersecurity, system and network administration, application development, or data analytics). Each specialization includes 4 computing courses and an internship with an industry partner.

The Nexus is ideally suited for students who have some college credit, but no degree. Applicable college credits already earned can be transferred in toward the Nexus. This includes high school graduates with some college credit earned from dual enrollment as well as adult
learners who completed some undergraduate college coursework but did not finish a degree. The shorter time to degree provided by the Nexus, especially when transferring in prior college credits, enables graduates to quickly enter the workforce in high-demand computing or information technology careers. Upon completion of the Nexus, students wishing to continue their education with a four year degree can easily transition to the BS in Computing - all credit already earned toward the Nexus will count toward the BSC. With the flexibility offered through face-to-face and online classes, students can complete the BSC while employed and at a pace that suits their individual needs.

Additionally, students who are pursuing a BS or BA in another major can reuse much of their core and take the additional 18 hours required to earn the Nexus (similar to pursuing a minor) to gain a breadth of knowledge in computing.

The Nexus is a truly flexible and “stackable” credential that can either be extended by completing the full BS in Computing or obtained as an additional credential on top of BS or BA in another discipline.
Bachelor of Science in Computing

**Foundation**
- Introduction to Computer Science
- Computer Science I
- Principles of Programming
- Introduction to Web Development
- Introduction to Databases

**Supporting Courses**
- Professional Ethics
- Professional & Technical Writing
- Elementary Statistics
- Precalculus

**General Education**
- Lab Sciences
- English Composition I & II
- Fine Arts
- Social Sciences
- Humanities
- American Government
- United States History
- Written and Oral Communication

**Cybersecurity**
- Cybersecurity
- Computer Forensics

**System & Network Administration**
- System & Network Administration I
- System & Network Administration II
- Advanced DB Systems

**Fundamentals of Computing**
- Data Analytics
- DevOps

**Application Development**
- Application Development I & II
- Mobile Development
- User-Centric Computing I & II
- Advanced Web Development
- Game Development I & II

**Experiential Learning**
- Two additional elective courses to support student’s chosen specialization. Can be from any specialization or from other disciplines.
- Internship (1-2 semesters) contributing to an industry-based project
- Capstone Project

Six required courses (bold) provide computing breadth. Students also select three courses (italics) to define a depth specialization. Other courses will be added as industry needs change in the future. Students may also create a custom specialization, e.g., with ART, FILM, GFA, GIS, etc.
## 2022-2023 BS in Computing Program Sheet

### UWG Core Curriculum (42 hours)

**Area A**
- ENGL 1101 - English Composition I (3)
- ENGL 1102 - English Composition II (3)
- MATH 1113 - Precalculus (3 of 4)

**Area B**
- B.1 Written and Oral Communications (choose 1):
  - ART 2000; ANTH 1110; COMM 1110; ENGL 2000, 2050; THEA 2050; **PHIL 2020 (see note below)**; XIDS 1004; FREN, GRMN, or SPAN 1001, 1002

- B.2 Other Institutional Options (choose 1):
  - ANTH 1100; BUSA 1900; CS 1000, 1020; LIBR 2100; MUSC 1110; XIDS 2001, 2002

**Area C**
- C.1 Fine Arts (choose 1):
  - XIDS 2100; ART 1201, 2201, 2202; ENGL 2060; FILM 2080; MUSC 1100, 1120; THEA 1100

- C.2 Humanities (choose 1, different subject than C.1):
  - XIDS 2100; COMM 1154, 2120, 2130, 2180, 2190; FREN, GRMN, or SPAN 1001, 1002, 2001, 2002; FORL 2200, 2300; **PHIL 2010, 2030 (see note below)**

**Area D - Option II for Science Majors**
- D.1 - Lab Science
  - Take any two from the following (with lab component): BIOL 1107+1107L, 1108+1108L; CHEM 1211+1211L, 1212+1212L; CHEM 1230K; GEOG 1112+1112L, 1113+1113L, 2553; GEOL 1121+1121L, 1122+1122L; PHYS 1111+1111L, 1112+1112L, 2211+2211L, 2212+2212L

- D.2 - Quantitative
  - MATH 1401 - Elementary Statistics (3) - required

**Area E - Social Sciences**
- E.1 - World History
  - HIST 1111 or HIST 1112

- E.2 - U.S. History
  - HIST 2111 or HIST 2112

- E.3 - American/Georgia Government
  - POLS 1101

- E.4 - Social Science Electives (choose 1):
  - ANTH 1110; ECON 2100, 2105, 2106; GEOG 1013, 2503; PHIL 2130; POLS 2201; PSYC 1101; SOCI 1101, 1160; XIDS 2300, 2301

*Note: Must take PHIL 2020 (in B.1) or PHIL 2010 or 2030 (in C.2) to satisfy prerequisite for required major supporting course PHIL 4120.*

### Area F, Supporting, & Major Courses (78 hours)

**Area F (18 hours)**
- MATH 1113 - Precalculus (1 of 4 hours)
- CS 1300 - Intro to Computer Science (4)
- CS 1301 - Computer Science I (4)
- COMP 2320 - Principles of Programming (3)
  - OR CS 1302 - Computer Science II (4)
- CS 2100 - Intro to Web Development (3)
- COMP 2200 - Intro to Databases (3)

**Supporting Courses (6 hours)**
- All of the following required:
  - ENGL 3405 - Professional & Technical Writing (3)
  - PHIL 4120 - Professional Ethics (3)

**Major Required Breadth (18 hours)**
- All of the following required:
  - COMP 2300 - Fundamentals of Computing (3)
  - COMP 2500 - Introduction to Computer Security (3)
  - COMP 3300 - Application Development I (3)
  - COMP 3400 - System & Network Administration I (3)
  - COMP 3600 - User-Centric Computing I (3)
  - COMP 3900 - Data Analytics (3)

**Major Elective Breadth (12 hours)**
- Choose 4 from the following:
  - COMP 2350 - Introduction to Digital Media (3)
  - COMP 2360 - Physical Computing (3)
  - COMP 3310 - Mobile Development (3)
  - COMP 3350 - Game Development I (3)
  - COMP 4400 - System & Network Administration II (3)
  - CS 3211 - Software Engineering I (3)
  - CS 3280 - Systems Programming (3)

**Major Elective Depth (9 hours)**
- Choose 3 from the following:
  - COMP 3500 - Cybersecurity (3)
  - COMP 4200 - Advanced DB Systems (3)
  - COMP 4300 - Application Development II (3)
  - COMP 4350 - Game Development II (3)
  - COMP 4420 - DevOps (3)
  - COMP 4500 - Computer Forensics (3)
  - COMP 4600 - User-Centric Computing II (3)
  - COMP 4985 - Special Topics in Computing (3)
  - CS 4180 - Advanced Web Development (3)

**Major Required High-Impact Practices & Professional Preparation (6 - 9 hours)**
- All of the following required:
  - COMP 4982 - Capstone Project (3)
  - COMP 4986 - Internship (3 or 6 hours)

**General Electives (6 - 9 hours)**
# 2022-2023 Program Map – BS in Computing

## Year 1

### Term 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1101: English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1113: Precalculus</td>
<td>4</td>
</tr>
<tr>
<td>CS 1300: Introduction to Computer Science</td>
<td>4</td>
</tr>
<tr>
<td>*Area C.2: Humanities</td>
<td>3</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

**Milestones**
- Complete ENGL 1101 C or better
- Complete Math 1113 C or better
- One of Area B.1 or Area C.2 satisfies PHIL 4120 prerequisite

### Term 2

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1102: English Composition II</td>
<td>3</td>
</tr>
<tr>
<td>COMP 2300: Fundamentals of Computing</td>
<td>3</td>
</tr>
<tr>
<td>CS 1301: Computer Science I</td>
<td>4</td>
</tr>
<tr>
<td>*Area B.1: Written and Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>Area B.2: Institutional Options</td>
<td>1</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

**Milestones**
- Complete ENGL 1102 C or better
- Complete CS 1301 C or better
- One of Area B.1 or Area C.2 satisfies PHIL 4120 prerequisite

## Year 2

### Term 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 2200: Introduction to Databases</td>
<td>3</td>
</tr>
<tr>
<td>CS 2100: Introduction to Web Development</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1401: Elementary Statistics</td>
<td>3</td>
</tr>
<tr>
<td>COMP 2320: Principles of Programming</td>
<td>3</td>
</tr>
<tr>
<td>HIST 1111 or 1112: World History I or World History II</td>
<td>3</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

**Milestones**
- All MATH requirements complete

### Term 2

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area D.1: Lab Science with Lab</td>
<td>4</td>
</tr>
<tr>
<td>POLS 1101: American Government</td>
<td>3</td>
</tr>
<tr>
<td>Core Area E.4: Social Science</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 4120: Professional Ethics</td>
<td>3</td>
</tr>
<tr>
<td>COMP 2500: Introduction to Computer Security</td>
<td>3</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

**Milestones**
## Year 3

### Term 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area C.1: Fine Arts</td>
<td>3</td>
</tr>
<tr>
<td>COMP 3400: System &amp; Network Administration I</td>
<td>3</td>
</tr>
<tr>
<td>COMP 3300: Application Development I</td>
<td>3</td>
</tr>
<tr>
<td>Area D.1: Lab Science with Lab</td>
<td>4</td>
</tr>
<tr>
<td>COMP 3600: User-Centric Computing I</td>
<td>3</td>
</tr>
<tr>
<td>SEMESTER TOTAL</td>
<td>16</td>
</tr>
</tbody>
</table>

**Milestones**
- Area D.1 lab sciences complete

### Term 2

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 2111 or 2112: U.S. History I or U.S. History II</td>
<td>3</td>
</tr>
<tr>
<td>COMP Breadth Elective</td>
<td>3</td>
</tr>
<tr>
<td>COMP 3800: Data Analytics</td>
<td>3</td>
</tr>
<tr>
<td>COMP Breadth Elective</td>
<td>3</td>
</tr>
<tr>
<td>COMP Breadth Elective</td>
<td>3</td>
</tr>
<tr>
<td>SEMESTER TOTAL</td>
<td>15</td>
</tr>
</tbody>
</table>

**Milestones**
- Prerequisites satisfied to take appropriate COMP Depth courses

### Year 4

### Term 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP Breadth Elective</td>
<td>3</td>
</tr>
<tr>
<td>COMP Depth Course</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>COMP 4986: Internship</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 3405: Professional and Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>SEMESTER TOTAL</td>
<td>15</td>
</tr>
</tbody>
</table>

**Milestones**
- Successful completion of internship with industry partner

### Term 2

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP Depth Course</td>
<td>3</td>
</tr>
<tr>
<td>COMP Depth Course</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>COMP 4982: Capstone</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>SEMESTER TOTAL</td>
<td>15</td>
</tr>
</tbody>
</table>

**Milestones**
- 

**COMP Breadth Elective**: select three of the following; at least two must be 3000 or above
- COMP 2350: Introduction to Digital Media
- COMP 4400: System & Network Administration II
- COMP 3310: Mobile Development
- COMP 3350: Game Development I
- COMP 2360: Physical Computing
- CS 3211: Software Engineering I
- CS 3280: Systems Programming

**COMP Depth Courses**: select three of the following
- COMP 3500: Cybersecurity
- COMP 4200: Advanced DB Systems
● COMP 4300: Application Development II
● COMP 4350: Game Development II
● COMP 4420: DevOps
● COMP 4500: Computer Forensics
● COMP 4600: User-Centric Computing II
● COMP 4985: Special Topics in Computing
● CS 4180: Advanced Web Development

*EITHER Area B.1 must be PHIL 2020, or Area C.2 must be one of PHIL 2010 or PHIL 2030 in order to satisfy the prerequisite for PHIL 4120.

**This program map is intended ONLY as a guide for students to plan their course of study. It does NOT replace any information in the Undergraduate Catalog, which is the official guide for completing degree requirements**

Note BSC majors are only allowed one D in their major courses (i.e., with prefix COMP or CS).

Core Curriculum (A-E) can be viewed here:  
https://www.westga.edu/student-services/Registrar/core-curriculum.php

Student Online Resources:

● [www.westga.edu/advising](http://www.westga.edu/advising) (Learn about: The name of your assigned advisor, program maps for all programs at UWG, tutorials on how to register and your wolf watch evaluation).
● [www.westga.edu/scoop](http://www.westga.edu/scoop) (Learn about: Fee payment deadlines, withdrawal deadlines, final exam schedules).
● [www.westga.edu/esc](http://www.westga.edu/esc) (Learn about: Requesting a transcript, financial aid information, requesting an enrollment verification, completing a FERPA form).
● [www.westga.edu/careerservices](http://www.westga.edu/careerservices) (Learn about: On/Off campus job opportunities, major and career exploration, resumes & cover letters, interviewing tips).
● [www.westga.edu/cas](http://www.westga.edu/cas) (Learn about: tutoring, academic coaching, supplemental instruction, success workshops).
Nexus in Computing

Foundation (42 hours)
- Lab Sciences
- English Composition I & II
- Fine Arts
- Social Sciences
- Humanities
- American Government
- United States History
- Written and Oral Communication
- Introduction to Ethics
- A2: College Algebra or Elementary Statistics
- C2: Introduction to Ethics
- D2: Intro to Computer Concepts
  If Data Analytics group is chosen:
  - A2: Statistics

Skills & Knowledge
Pick one of the groups* (12 credits)
- Fundamentals of Computing System & Network Administration I
- System & Network Administration II
- Introduction to Computer Security

- Computer Science I
- Principles of Programming
- Application Development I
- Application Development II

Cybersecurity
- Fundamentals of Computing System & Network Administration I
- Introduction to Computer Security
- Cybersecurity

Data Analytics
- Introduction to Computer Science
- Introduction to Databases
- Advanced DB Systems
- Data Analytics

Experiential Learning (6 credits)
- Internship
  - Two semesters contributing to an industry-based project.

*Specialization in one of four areas.
# 2022-2023 Nexus in Computing Program Sheet

## UWG Core Curriculum (42 hours)

**Area A**
- ENGL 1101 - English Composition I (3)
- ENGL 1102 - English Composition II (3)
- MATH 1111 - College Algebra
- OR MATH 1401 - Elementary Statistics *(required for Data Analytics specialization)*

**Area B**
- **B.1 Written and Oral Communications (choose 1):**
  - ART 2000; ANTH 1101; COMM 1110; ENGL 2000, 2050; THEA 2050; PHIL 2020; XIDS 1004; Foreign Language 1001, 1002

  - **B.2 Other Institutional Options (choose 1):**
    - ANTH 1100; BUSA 1900; CS 1000, 1020; LIBR 2100; MUSC 1110; XIDS 2001, 2002

**Area C**
- **C.1 Fine Arts (choose 1):**
  - XIDS 2100; ART 1201, 2201, 2202; ENGL 2060; FILM 2080; MUSC 1100, 1120; THEA 1100

- **C.2 Humanities:**
  - PHIL 2030 - Introduction to Ethics *(required)*

**Area D - Option II for Science Majors**
- **D.1 - Lab Science**
  - Take any two from the following (with lab component): BIOL 1107+1107L, 1108+1108L; CHEM 1211+1211L, 1212+1212L; CHEM 1230K; GEOG 1112+1112L, 1113+1113L, 2553; GEOG 1121+1121L, 1122+1122L; PHYS 1111+1111L, 1112+1112L, 2211+2211L, 2212+2212L

- **D.2 - Quantitative**
  - CS 1030 - Intro to Computer Concepts *(3) - required*

**Area E - Social Sciences**
- **E.1 - World History**
  - HIST 1111 or HIST 1112

- **E.2 - U.S. History**
  - HIST 2111 or HIST 2112

- **E.3 - American/Georgia Government**
  - POLS 1101

- **E.4 - Social Science Electives (choose 1):**
  - ANTH 1102; ECON 2100, 2105, 2106; GEOG 1013, 2503; PHIL 2130; POLS 2201; PSYC 1101; SOCI 1101, 1160; XIDS 2300, 2301

## Computing Skills and Knowledge (12 hours)

Choose one of the following specializations (all courses listed for the specialization are required):

**Application Development**
- CS 1301 - Computer Science I *(4)*
- COMP 2320 - Principles of Programming *(3)*
- COMP 3300 - Application Development I *(3)*
- COMP 4300 - Application Development II *(3)*

**Cybersecurity**
- COMP 2300 - Fundamentals of Computing *(3)*
- COMP 2500 - Introduction to Computer Security *(3)*
- COMP 3400 - System & Network Administration I *(3)*
- COMP 3500 - Cybersecurity *(3)*

**Data Analytics**
- Note: Must take MATH 1401 in Area A
- CS 1300 - Introduction to Computer Science *(4)*
- COMP 2200 - Introduction to Databases *(3)*
- COMP 3800 - Data Analytics *(3)*
- COMP 4200 - Advanced DB Systems *(3)*

**System and Network Administration**
- COMP 2300 - Fundamentals of Computing *(3)*
- COMP 2500 - Introduction to Computer Security *(3)*
- COMP 3400 - System & Network Administration II *(3)*
- COMP 4400 - System & Network Administration II *(3)*

**Experiential Learning Experience (6 hours)**
- Required for all specializations
- COMP 4986 - Internship *(6)*
## 2022-2023 Program Map – Nexus in Computing (Application Development)

<table>
<thead>
<tr>
<th>YEAR 1</th>
<th>TERM 1</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1101: English Composition I</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 1111 or MATH 1401</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Area D.2: CS 1030</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS 1301: Computer Science I</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>POLS 1101: American Government</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>16</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Milestones**
- Complete ENGL 1101 C or better
- Complete Math 1111 or 1401 C or better

<table>
<thead>
<tr>
<th>TERM 2</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1102: English Composition II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>COMP 2320 Principles of Programming</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Core Area E.4: Social Science</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>*Area B.1: Written and Oral Communication</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HIST 2111 or 2112: U.S. History I or U.S. History II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>15</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Milestones**
- Complete ENGL 1102 C or better

<table>
<thead>
<tr>
<th>YEAR 2</th>
<th>TERM 1</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 3300: Application Development I</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Area C.1: Fine Arts</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Area C.2: PHIL 2030 (Intro to Ethics)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Area D.1: Lab Science with Lab</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIST 1111 or 1112: World History 1 or World History II</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>16</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Milestones**

<table>
<thead>
<tr>
<th>TERM 2</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area D.1: Lab Science</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Area B.2: Institutional Options</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>COMP 4300: Application Development II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>COMP 4986: Internship</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>13</strong></td>
<td></td>
</tr>
</tbody>
</table>

**This program map is intended ONLY as a guide for students to plan their course of study. It does NOT replace any information in the Undergraduate Catalog, which is the official guide for completing degree requirements.**

Note Computing Nexus majors are only allowed one D in their major courses (i.e., with prefix COMP or CS).

Core Curriculum (A-E) can be viewed here: [www.westga.edu/student-services/registrar/core-curriculum.php](http://www.westga.edu/student-services/registrar/core-curriculum.php)

Student Online Resources:

- [www.westga.edu/advising](http://www.westga.edu/advising) (Learn about: The name of your assigned advisor, program maps for all programs at UWG, tutorials on how to register and your wolf watch evaluation).
- [www.westga.edu/scoop](http://www.westga.edu/scoop) (Learn about: Fee payment deadlines, withdrawal deadlines, final exam schedules).
- [www.westga.edu/esc](http://www.westga.edu/esc) (Learn about: Requesting a transcript, financial aid information, requesting an enrollment verification, completing a FERPA form).
- [www.westga.edu/careerservices](http://www.westga.edu/careerservices) (Learn about: On/Off campus job opportunities, major and career exploration, resumes & cover letters, interviewing tips).
- [www.westga.edu/cas](http://www.westga.edu/cas) (Learn about: tutoring, academic coaching, supplemental instruction, success workshops).
## 2022-2023 Program Map – Nexus in Computing (Cybersecurity)

### YEAR 1

#### TERM 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1101: English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1111 or MATH 1401</td>
<td>3</td>
</tr>
<tr>
<td>Area D.2: CS 1030</td>
<td>3</td>
</tr>
<tr>
<td>COMP 2300: Fundamentals of Computing</td>
<td>3</td>
</tr>
<tr>
<td>POLS 1101: American Government</td>
<td>3</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

**Milestones**
- Complete ENGL 1101 C or better
- Complete Math 1111 or 1401 C or better

#### TERM 2

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1102: English Composition II</td>
<td>3</td>
</tr>
<tr>
<td>Area C.1: Fine Arts</td>
<td>3</td>
</tr>
<tr>
<td>COMP 2500: Intro to Computer Security</td>
<td>3</td>
</tr>
<tr>
<td>*Area B.1: Written and Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>HIST 2111 or 2112: U.S. History I or II</td>
<td>3</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

**Milestones**
- Complete ENGL 1102 C or better

### YEAR 2

#### TERM 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 3400: System and Network Administration I</td>
<td>3</td>
</tr>
<tr>
<td>COMP 3500: Cybersecurity</td>
<td>3</td>
</tr>
<tr>
<td>Area C.2: PHIL 2030 (Intro to Ethics)</td>
<td>3</td>
</tr>
<tr>
<td>Area D.1: Lab Science with Lab</td>
<td>4</td>
</tr>
<tr>
<td>HIST 1111 or 1112: World History I or II</td>
<td>3</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

**Milestones**

#### TERM 2

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area D.1: Lab Science</td>
<td>3</td>
</tr>
<tr>
<td>Area B.2: Institutional Options</td>
<td>2</td>
</tr>
<tr>
<td>Core Area E.4: Social Science</td>
<td>3</td>
</tr>
<tr>
<td>COMP 4986: Internship</td>
<td>6</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

**Milestones**

**Note:** Computing Nexus majors are only allowed one D in their major courses (i.e., with prefix COMP or CS). Core Curriculum (A-E) can be viewed here: [www.westga.edu/student-services/registrar/core-curriculum.php](http://www.westga.edu/student-services/registrar/core-curriculum.php)

**Student Online Resources:**

- [www.westga.edu/advising](http://www.westga.edu/advising) (Learn about: The name of your assigned advisor, program maps for all programs at UWG, tutorials on how to register and your wolf watch evaluation).
- [www.westga.edu/scoop](http://www.westga.edu/scoop) (Learn about: Fee payment deadlines, withdrawal deadlines, final exam schedules).
- [www.westga.edu/esc](http://www.westga.edu/esc) (Learn about: Requesting a transcript, financial aid information, requesting an enrollment verification, completing a FERPA form).
- [www.westga.edu/careerservices](http://www.westga.edu/careerservices) (Learn about: On/Off campus job opportunities, major and career exploration, resumes & cover letters, interviewing tips).
- [www.westga.edu/cas](http://www.westga.edu/cas) (Learn about: tutoring, academic coaching, supplemental instruction, success workshops).
# 2022-2023 Program Map – Nexus in Computing (Data Analytics)

## YEAR 1

<table>
<thead>
<tr>
<th>TERM 1</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ENGL 1101: English Composition I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MATH 1111 or MATH 1401</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Area D.2: CS 1030</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Area C.2: PHIL 2030 (Intro to Ethics)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Area B.2: Institutional Options</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>SEMESTER TOTAL</td>
<td>13</td>
</tr>
</tbody>
</table>

**Milestones**
- Complete ENGL 1101 C or better
- Complete Math 1111 or 1401 C or better

<table>
<thead>
<tr>
<th>TERM 2</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ENGL 1102: English Composition II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>COMP 2200 Introduction to Databases</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CS 1300: Introduction to Computer Science</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>*Area B.1: Written and Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HIST 2111 or 2112: U.S. History I or II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>SEMESTER TOTAL</td>
<td>16</td>
</tr>
</tbody>
</table>

**Milestones**
- Complete ENGL 1102 C or better
- Complete CS 1300 C or better

## YEAR 2

<table>
<thead>
<tr>
<th>TERM 1</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>COMP 3800: Data Analytics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>COMP 4200: Advanced DB Systems</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Area C.1: Fine Arts</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Area D.1: Lab Science</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>HIST 1111 or 1112: World History 1 or World History II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>SEMESTER TOTAL</td>
<td>16</td>
</tr>
</tbody>
</table>

**Milestones**

<table>
<thead>
<tr>
<th>TERM 2</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Area D.1: Lab Science</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>POLS 1101: American Government</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Core Area E.4: Social Science</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>COMP 4986: Internship</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>SEMESTER TOTAL</td>
<td>15</td>
</tr>
</tbody>
</table>

**Note**
- This program map is intended ONLY as a guide for students to plan their course of study. It does NOT replace any information in the Undergraduate Catalog, which is the official guide for completing degree requirements.

- Note Computing Nexus majors are only allowed one D in their major courses (i.e., with prefix COMP or CS).

- Core Curriculum (A-E) can be viewed here: [www.westga.edu/student-services/registrar/core-curriculum.php](http://www.westga.edu/student-services/registrar/core-curriculum.php)

**Student Online Resources:**

- [www.westga.edu/advising](http://www.westga.edu/advising) (Learn about: The name of your assigned advisor, program maps for all programs at UWG, tutorials on how to register and your wolf watch evaluation).
- [www.westga.edu/scoop](http://www.westga.edu/scoop) (Learn about: Fee payment deadlines, withdrawal deadlines, final exam schedules).
- [www.westga.edu/esc](http://www.westga.edu/esc) (Learn about: Requesting a transcript, financial aid information, requesting an enrollment verification, completing a FERPA form).
- [www.westga.edu/careerservices](http://www.westga.edu/careerservices) (Learn about: On/Off campus job opportunities, major and career exploration, resumes & cover letters, interviewing tips).
- [www.westga.edu/cas](http://www.westga.edu/cas) (Learn about: tutoring, academic coaching, supplemental instruction, success workshops).
### 2022-2023 Program Map – Nexus in Computing (System & Network Admin)

<table>
<thead>
<tr>
<th>YEAR 1</th>
<th>TERM 1</th>
<th>Credits</th>
<th>TERM 2</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Course</td>
<td></td>
<td></td>
<td>ENGL 1102: English Composition II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>COMP 3400: System and Network Admin I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>COMP 2500: Intro to Computer Security</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*Area B.1: Written and Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>HIST 2111 or 2112: U.S. History I or II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SEMESTER TOTAL</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Course</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ENGL 1101: English Composition I</td>
<td>3</td>
<td></td>
<td>ENGL 1102: English Composition II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MATH 1111 or MATH 1401</td>
<td>3</td>
<td></td>
<td>COMP 3400: System and Network Admin I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Area D.2: CS 1030</td>
<td>3</td>
<td></td>
<td>COMP 2500: Intro to Computer Security</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>COMP 2300: Fundamentals of Computing</td>
<td>3</td>
<td></td>
<td>*Area B.1: Written and Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>POLS 1101: American Government</td>
<td>3</td>
<td></td>
<td>HIST 2111 or 2112: U.S. History I or II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>SEMESTER TOTAL</td>
<td>15</td>
<td></td>
<td>SEMESTER TOTAL</td>
<td>15</td>
</tr>
</tbody>
</table>

**Milestones**
- Complete ENGL 1101 C or better
- Complete Math 1111 or 1401 C or better

<table>
<thead>
<tr>
<th>YEAR 2</th>
<th>TERM 1</th>
<th>Credits</th>
<th>TERM 2</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Course</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>COMP 4400: System and Network Administration II</td>
<td>3</td>
<td></td>
<td>Area D.1: Lab Science</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Area C.1: Fine Arts</td>
<td>3</td>
<td></td>
<td>Area B.2: Institutional Options</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Area C.2: PHIL 2030 (Intro to Ethics)</td>
<td>3</td>
<td></td>
<td>Core Area E.4: Social Science</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Area D.1: Lab Science with Lab</td>
<td>4</td>
<td></td>
<td>COMP 4986: Internship</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>HIST 1111 or 1112: World History I or II</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SEMESTER TOTAL</td>
<td>16</td>
<td></td>
<td>SEMESTER TOTAL</td>
<td>14</td>
</tr>
</tbody>
</table>

**Milestones**

**This program map is intended ONLY as a guide for students to plan their course of study. It does NOT replace any information in the Undergraduate Catalog, which is the official guide for completing degree requirements**

Note Computing Nexus majors are only allowed one D in their major courses (i.e., with prefix COMP or CS).

Core Curriculum (A-E) can be viewed here: [www.westga.edu/student-services/registrar/core-curriculum.php](http://www.westga.edu/student-services/registrar/core-curriculum.php)

Student Online Resources:

- [www.westga.edu/advising](http://www.westga.edu/advising) (Learn about: The name of your assigned advisor, program maps for all programs at UWG, tutorials on how to register and your wolf watch evaluation).
- [www.westga.edu/scoop](http://www.westga.edu/scoop) (Learn about: Fee payment deadlines, withdrawal deadlines, final exam schedules).
- [www.westga.edu/esc](http://www.westga.edu/esc) (Learn about: Requesting a transcript, financial aid information, requesting an enrollment verification, completing a FERPA form).
- [www.westga.edu/careerservices](http://www.westga.edu/careerservices) (Learn about: On/Off campus job opportunities, major and career exploration, resumes & cover letters, interviewing tips).
- [www.westga.edu/cas](http://www.westga.edu/cas) (Learn about: tutoring, academic coaching, supplemental instruction, success workshops).
BS and Nexus in Computing - COMP & CS Course Prerequisite Flowchart

**FUNDAMENTALS**
- **COMP 2200** Intro to Databases
- **COMP 2300** Fundamentals of Computing
- **CS 1300** Intro to Computing (C or better required)
- **CS 1301** Computer Science I (C or better required)
- **CS 2100** Intro to Web Development
- **MATH 1401** Elementary Statistics (C or better required)

**BREADTH**
- **COMP 2350** Intro to Digital Media
- **COMP 2360** Physical Computing
- **COMP 2370** Intro to Computer Security
- **COMP 2500** Intro to Computer Security
- **COMP 3400** Sys Admin I
- **COMP 3440** Sys Admin II
- **COMP 3350** Game Dev I
- **COMP 3350** Game Dev II
- **COMP 3360** User-Centric Computing I
- **COMP 3360** User-Centric Computing II
- **COMP 3370** App Dev I
- **COMP 3370** App Dev II
- **COMP 3380** Mobile Dev
- **COMP 3385** Systems Programming
- **COMP 3800** Data Analytics

**DEPTH**
- **COMP 4200** Advanced Databases
- **COMP 4420** DevOps
- **COMP 4500** Computer Forensics
- **COMP 3500** Cybersecurity
- **COMP 4350** Game Dev II
- **COMP 4600** User-Centric Computing II
- **COMP 4300** App Dev II
- **CS 4180** Adv Web Dev
- **COMP 4985** Special Topics Prereq: Dept. permission

**PROFESSIONAL PREPARATION AND HIGH-IMPACT PRACTICES**
- **COMP 4982** Capstone Project
  Prereq: Senior status.
- **COMP 4986** Internship
  Dept. permission required.

**LEGEND:**
Solid line indicates a required prerequisite. Multiple lines leading to a solid bar indicate multiple required prerequisites (“AND”).
Broken lines indicates alternate prerequisites (“OR”).
2022-2023 Course Descriptions  
Computing (COMP) & Computer Science (CS)  

All courses are 3 credit hours unless otherwise noted.

COMP 2200  Introduction to Databases  
Prerequisite: none  
This course introduces the fundamentals of database systems. Topics include database design, implementation, and manipulation in a traditional database system, such as a relational database system.

COMP 2300  Fundamentals of Computing  
Prerequisite: none  
This course provides a broad survey of computer systems. It covers topics such as basics of computer architecture and organization, operating systems, computer networking, programming, mobile and web development.

COMP 2320  Principles of Programming  
Prerequisite: CS 1301 (C or better)  
This course introduces object-oriented concepts. Topics include classes, objects, encapsulation, inheritance, and interfaces. Additional topics may include File I/O, Graphical User Interfaces, and related tools and technologies.

COMP 2350  Introduction to Digital Media  
Prerequisite: none  
This course introduces the creation and modification of different types of digital media. Topics include techniques and tools in digital media content development including images, audio, video, web multimedia.

COMP 2360  Physical Computing  
Prerequisite: COMP 2300 OR CS 1300 (C or better) OR CS 1301 (C or better)  
Introduction to physical computing technologies and applications such as Internet-of-Things and wearable devices, including processing digital and analog sensor data, inter-device communication, Internet connectivity, and UX (user eXperience) issues.
COMP 2500    Introduction to Computer Security

**Prerequisite:** COMP 2300
This course introduces the fundamentals of computer security in protection of modern computer systems. Topics include hardware and software components of modern computer systems, various security vulnerabilities and threats, and security practices and measures to safeguard against these threats.

COMP 3300    Application Development I

**Prerequisite:** COMP 2320 (C or better) or CS 1302 (C or better)
This course introduces students to the effective practices, principles, and patterns of software development and testing.

COMP 3310    Mobile Development

**Prerequisite:** COMP 3300
This course introduces the fundamentals in the design, implementation, and distribution of mobile applications. Topics include mobile device architecture, software engineering, user interface design, and app distribution.

COMP 3350    Game Development I

**Prerequisite:** CS 1301 (C or better)
This course introduces the process of the design and development of video games. Topics include game history, game styles, game components, game evaluation and analysis, and game development using a modern game engine and programming language.

COMP 3400    System & Network Administration I

**Prerequisite:** COMP 2300
This course covers the fundamentals of network and operating system theory and practice. Topics include the TCP/IP protocol stack, routing, basic OS administration, and basic network services.

COMP 3500    Cybersecurity

**Prerequisite:** COMP 2500
This course provides an overview of computer and network security and countermeasure techniques. Topics include cryptography, Public Key Infrastructures (PKI), viruses, malware, security of different layers of the TCP/IP stack, Firewall, VPN, TLS, Bitcoin, and Web security. Techniques and tools used in defending network security will also be covered.
COMP 3600   User-Centric Computing I
Prerequisite: COMP 2320 (C or better)
The course introduces the fundamentals of human computer interaction (HCI) and the principles in the design and evaluation of user interfaces. Topics covered include: guidelines/principles in interface design, usability evaluation, universal design.

COMP 3800   Data Analytics
Prerequisite: Math 1401 (C or better)
This course introduces the basics of data science and data analytics to extract information from unstructured data. Topics include technologies, techniques, and tools in data collection, storage, processing, and analysis.

COMP 4200   Advanced Database Systems
Prerequisite: COMP 2200
This course introduces the advanced DB topics, such as stored procedures, functions, triggers, indexes, performance tuning and query optimization.

COMP 4300   Application Development II
Prerequisite: COMP 3300
In this course students will learn and apply effective practices, principles, and patterns of large-scale software development and testing as part of collaborative development teams.

COMP 4350   Game Development II
Prerequisite: COMP 3350
This course introduces more advanced concepts and topics in game development, including 3D game development using a modern game engine.

COMP 4400   System & Network Administration II
Prerequisite: COMP 3400
This course covers the advanced topics of network and operating system administration. Topics include technologies and tools in virtualization of computing resources, cloud-based systems and services, among others.

COMP 4420   DevOps
Prerequisite: COMP 3400
This course provides an introduction to the principles of DevOps and the DevOps tools that enable the optimization of an organization’s development workflow. Topics include DevOps concepts, build automation, provisioning, monitoring, and deployment, among others.
COMP 4500  Computer Forensics

**Prerequisite:** COMP 2500 OR COMP 3400
This course provides an overview of the principles and practices of computer security forensics. Topics may include memory, file system, operating system, and computer forensic investigative processes, and tools and methodologies for computer forensics investigation.

COMP 4600  User-Centric Computing II

**Prerequisite:** COMP 3600
This is a project based course. Students will analyze, design and implement a user-centric application prototype, perform usability tests and analyze results.

COMP 4982  Capstone Project

**Prerequisite:** Senior status
This course provides students an opportunity to apply what they have learned in their selected concentrations to a relatively large scale project. Students will work in teams to complete the project requirements.

COMP 4985  Special Topics in Computing

**Prerequisite:** Department permission
Topics in Computing designed to give students knowledge at the frontier of a rapidly changing field.

COMP 4986  Internship

**Credit hours:** 3 - 6
**Prerequisite:** Senior status or permission of department
A hands-on supervised field experience in computing. Students will create and present a comprehensive portfolio documenting the field experience.

CS 1300  Introduction to Computer Science

**Credit hours:** 4
**Prerequisite:** none
This course introduces two fundamental aspects of computer science - abstraction and design - as students learn to develop programs in a high-level programming language. Students will study and implement a variety of applications, including graphics and scientific simulations. The course assumes no prior background in programming or computer science.
CS 1301  Computer Science I

**Credit hours:** 4
Prerequisite: none
This course explores the three fundamental aspects of computer science - theory, abstraction, and design - as the students develop moderately complex software in a high-level programming language. It will emphasize problem solving, algorithm development, and object-oriented design and programming. This course may not be attempted more than three times without department approval.

CS 2100  Introduction to Web Development

**Prerequisite:** CS 1301 (C or better)

An introduction to the design and implementation of web pages and sites: foundations of human-computer interaction; development processes; interface, site and navigation design; markup and style-sheet languages; site evaluation; introduction to client-side scripting.

CS 3211  Software Engineering I

**Prerequisite:** CS 1302 (B or better) OR COMP 2320 (C or better)

An introduction to the software development life cycle and contemporary software development methods. This course places special emphasis on object-oriented systems. Students are expected to complete a medium scale software project.

CS 3280  Systems Programming

**Prerequisite:** CS 1302 (B or better) OR COMP 2320 (C or better)

Introduction to system-level software development. Topics include OS processes, network communication, file-system organization and manipulation, and script programming.

CS 4180  Advanced Web Development

**Prerequisite:** CS 2100 AND either CS 3211 OR COMP 3300 (C or better)

This course focuses on current industry best practices used to develop dynamic, interactive, multi-page websites. Topics include user-interface development, common web components, database interactions, and security.